BOOK REVIEWS

The Teaching of Mathematics in the Higher Schools of Prussia. By J. W. A. YOUNG, Assistant Professor of the Pedagogy of Mathematics, University of Chicago. Size, 7½×5 in. Pp. xiv+141. Price, 80 cents. New York: Longmans, Green, & Co.

FROM the profusion of loose pedagogical theorizing through which the mathematical teacher, who is desirous to improve, has of late had to feel his way, it is refreshing to turn to an account of something which is actually being done. This little volume is a systematized report of what Mr. Young saw during the greater part of a year spent in visiting the schools of Prussia with a view to ascertaining the general status of the schools; the part played by the government in school administration; the character of the teaching and of the teacher's preparation; the classes of institutions and the nature of their curricula.

The book is largely statistical in character, the author apparently preferring to allow the facts and results to speak for themselves. The report shows clearly that the military spirit of Prussia has left its mark upon the educational system of the country to so great an extent as to unfit it to American conditions; but that in many ways the mathematical teacher of our country may gain immensely from a study of Prussian methods of instruction. One closes the book with the feeling that rather too much attention has been paid to the better classes of gymnasia, those of Hanover, Frankfurt, and Berlin receiving substantially all the attention, and that the book is likely to give too favorable an idea of the schools of Prussia. The references to fuller details of the system, which are sprinkled through the book, give one the means of correcting his idea in this particular.

In the writer's opinion the book evinces rather too great a disposition to judge of the merits of a system of education by the character of the examinations and the way in which students pass them. When we remember that the teachers themselves have been brought up under the highly — shall we say too highly — organized Prussian system, and that they have not a little to say about the subject-matter of these examinations, it is not difficult to see that students might be put into condition to make a very good showing on the examination without having the substance of education. When a definite goal is set and the teacher, if not the pupil, knows pretty well from both experience and official relationship, what the goal is, the struggle to reach it is half over. That, however, the substance of education is secured under the Prussian scheme is proved by the array of great Prussian mathematicians who have shed luster upon the century just closed. This fact is also pointed out by the author, though, we think, rather too incidentally.

Finally, the thought which most forcibly impressed the writer as he read both on and between the lines, was that most of the ills of secondary mathematical teaching will be corrected when our school authorities shall have made efficient scholarship on the part of candidates for teacher's positions a prerequisite to appointment. The demand

for higher efficiency will hardly be met without adding materially to the remuneration of the secondary teacher as well as to his feeling of security in office. Until this can be brought about teaching cannot become a profession with us as it is with the Prussians, and no amount of wrangling over methods of teaching can be expected to bring relief. School officers do not yet believe that the best method in the hands of the unskillful teacher is deadening to both teacher and pupil, and that a poor method will do much in the hands of a living thinker at the teacher's desk.

This modest little volume which theorizes so little and yet stimulates so much thought on the reader's part should be on the book-shelf of every wide-awake teacher.

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A Text-book of Geology. By ALBERT PERRY BRIGHAM. Pp. 477. D. Appleton & Company, 1901.

PROFESSOR BRIGHAM'S new work belongs to the "Twentieth Century Text-Books." It is a carefully written treatise and deserves the attention of teachers of geology in the secondary schools. The author has followed conservative methods of treatment, there is but little attempt made to present topics in a new and striking way. The whole work may be characterized as safe and painstaking rather than brilliant. In the preface the author makes the following statement: "It has not been thought necessary to write down to students of high-school age and training." This attitude will cripple the usefulness of the book in high-schools. It explains, however, the very evident fact that the work is above the average high-school pupil. One very valuable feature of the book is the abundance of illustrative material, which the author has collected from numerous sources and brought together in convenient form for reference. In this respect the work is unexcelled by any elementary text-book on geology which the writer has seen.

The text is divided into three portions of which the first, devoted to dynamical geology, is the most fully treated. On the whole this portion of the work is very satisfactory. Stress is laid upon the activity of the different dynamic agencies, especially as regards their preliminary work in the making of topography. Many examples of this work are cited; most of them are new to the general reader and they are to the point. Relatively small space is devoted to the second part of the book, that which treats of structural geology. The minute and gross structures of rocks are treated in separate chapters. The author fails to give the more modern views respecting the metamorphic rocks. No mention is made of the results obtained by such an investigator as Van Hise. The chapter on "Physiographic Structures," which concludes the second part of the book, is thoroughly good. The third and concluding part of the work takes up the subject of historical geology. In the first chapter the author considers the general principles of the subject, treating of such subjects as the following: fossilization, succession of living forms, life periods of species, geographical distributian, and the like. Then follow chapters on different periods of geological history. The general treatment of each period is the same; the name and subdivisions are considered first, then the general character of the period is noted, then follows a good description of the several types of life prominent in the period. Economic products are treated in some detail, and at intervals attention is called to the geography of the